

**PATIENT**

Marley Bennett

**SPECIES**

Canine

**BREED**

Blue Heeler

**SEX**

Female Spayed

**AGE**

12

**WEIGHT**

60 lbs.

**INTERPRETED BY**

R. McKenzie Daniel,  
DVM, DABVP  
(Canine and Feline)

**IMAGING PERFORMED BY**

Dr. Trae Cutchin

**HOSPITAL NAME**

Friendship Springs  
VC

**REFERRING VET**

Dr. Trae Cutchin

**INVOICE**

15255

**DATE**

5/18/22

**PRESENTING CLINICAL SIGNS**

Pt doing well at home, incidental finding of lab abnormalities pre-dental  
Abnormal PE/Chem/CBC/UA Results: Increased alkp, isosthenuria, significant proteinuria UPC ratio 2.9, no evidence bacteruria, hematuria, or pyuria

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 3.0 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.

The area of the aortic trifurcation was free of pathology.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pyelectasia was present in the right kidney. Minor pyelectasia was noted in the left kidney. The left kidney measured 6.3 cm in length. The right kidney measured 6.8 cm in length.

**Adrenal Glands**

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.86 cm width at the caudal pole and 0.78 cm width at the cranial pole.

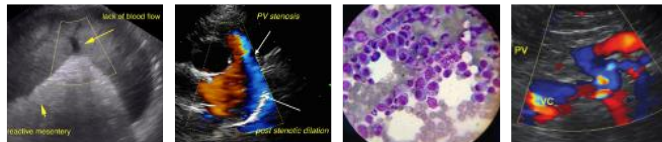
A well-defined, hyperechoic nodule was present in the mid to cranial pole of the right adrenal gland with mild associated symmetrical capsule expansion. The nodule did not exhibit signs of mineralization or vascular invasion. The nodule measured 1.5 cm x 1.3 cm. Overall mild right adrenal enlargement noted with mild asymmetrical capsule contour and subtle nonhomogeneous mid to caudal pole parenchyma. NO evidence of mineralization or vascular invasion. Overall, the right adrenal gland measured 1.7 cm at the cranial pole in width and 1.3 cm at the caudal pole in width.

**Spleen**

The spleen exhibited primarily finely textured parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Mild generalized parenchyma heterogeneity was present without evidence of nodular changes. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. The parenchymal heterogeneity is likely consistent with benign changes such as extramedullary hematopoiesis or age-related remodeling with minor potential for inflammatory or neoplastic disease.

**Liver/ Gallbladder**

The liver presented enlarged in size. The liver exhibited subjective mild uniform increased parenchyma echogenicity, exhibiting mild coarse echotexture. The capsule of the liver was symmetrically rounded to mildly swollen in margination. No masses or nodules noted. The hepatic and portal vasculature were normal in appearance without signs of congestion.



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The gallbladder was non distended in size with primarily anechoic content with minor gallbladder debris. The cystic duct and common bile ducts were normal without evidence of dilation.

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**Gastrointestinal**

The pylorus exhibited intact yet mildly prominent wall layering. Minor retained anechoic pyloric fluid was present. The gastric body wall measured 0.39 cm. The pylorus wall measured 0.74 cm.

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The duodenum exhibited intact yet subjective mild prominent wall layering with mild retained duodenal fluid. No evidence of mechanical duodenal obstructive pattern. The duodenum wall measured 0.52 cm. The jejunum and ileum to the level of the colon were sonographically normal.

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Normal visible colon wall layers were present with apparent formed feces in lumen.

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**Pancreas**

The parenchyma of the left limb, body, and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease were evident.

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**Free Abdomen**

No overt lymphadenopathy or peritoneal free fluid was present. Subtle areas of variably echogenic cranial omentum were present medial to the spleen, not considered indicative of pathology and likely incidental.

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**ULTRASONOGRAPHIC FINDINGS**

- Hepatopathy- subjectively benign, suggestive of vacuolar hepatopathy pattern
- Minor gallbladder debris (non-mucocele)
- Nodular to mildly irregular right adrenal gland- functional/nonfunctional adenoma, benign hyperplasia, potential for emerging neoplasia (i.e., pheochromocytoma, adenocarcinoma) possible.
- Nonspecific mild chronic renal changes
- Possible mild pyloric gastritis and duodenitis

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

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Given the lack of reported clinical signs in this patient, the clinical significance of the right adrenal presentation is unclear. Screening blood pressure recommended to assess for evidence of hypertension, which may allude to a pheochromocytoma. Full adrenal work up also could be considered if clinical suspicion of adrenal hyperfunctionality given the isosthenuria, while proteinuria may be associated with primary renal origin (i.e., glomerulonephritis or other glomerulopathy), although proteinuria has also been associated with hyperadrenocorticism and at times, pheochromocytoma.

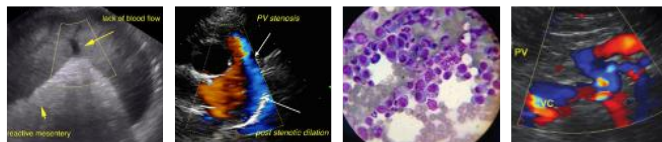
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Pending additional diagnostics, hepatosupportive medications, including Denamarin and ursodiol, as well as sonographic monitoring of the right adrenal gland for evidence of progressive changes with initial recheck in 4-6 weeks would be reasonable.



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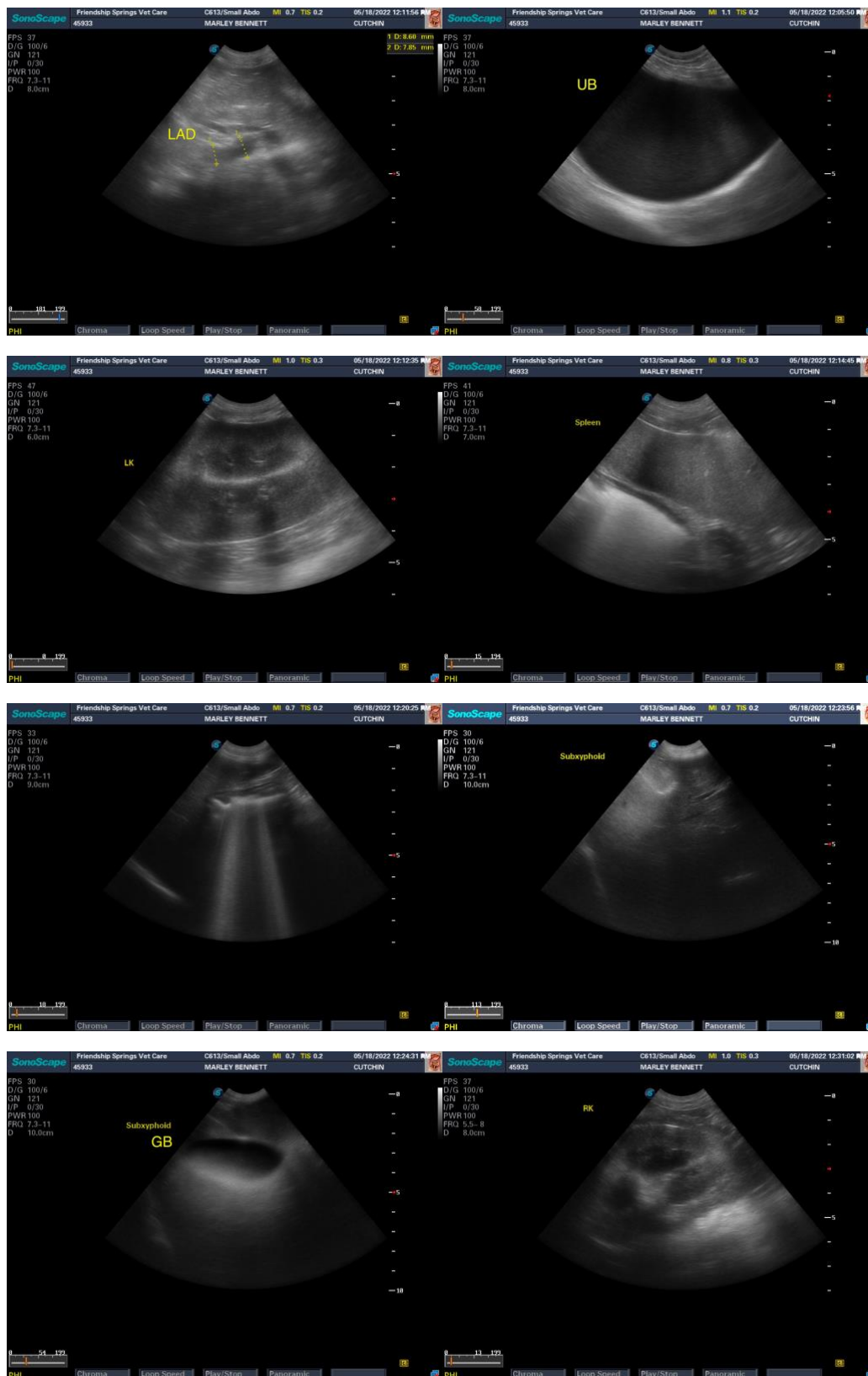
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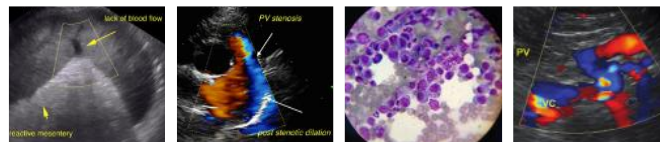
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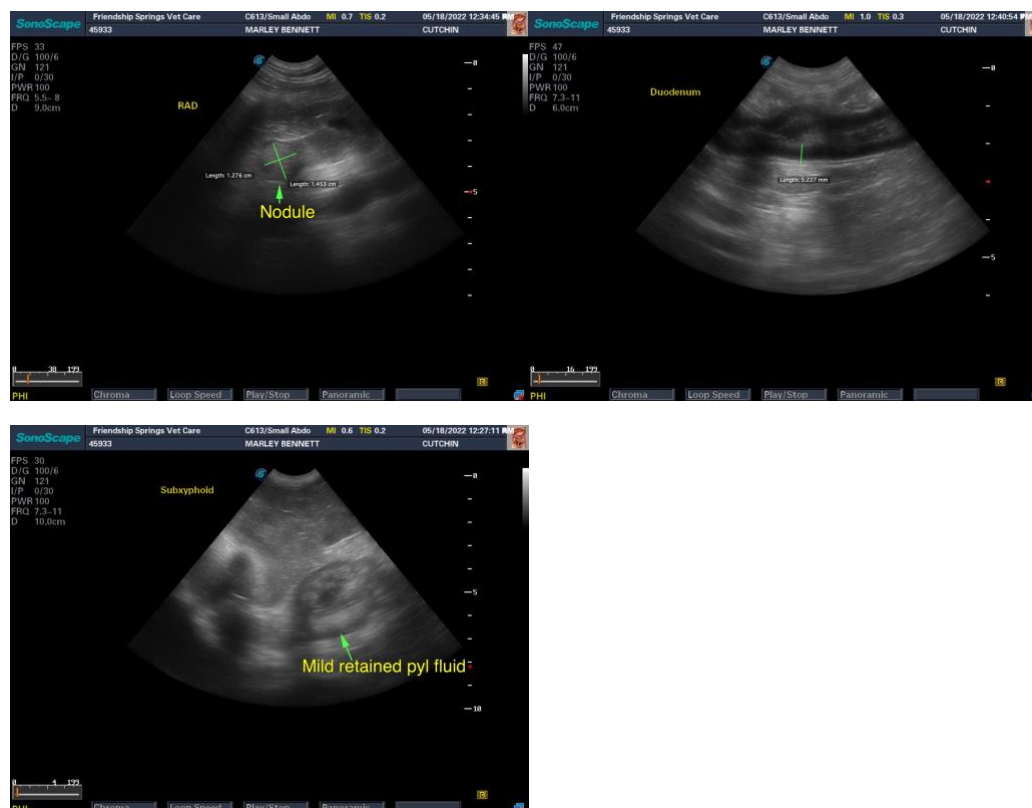
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

**R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)**  
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